

REMARKS/ARGUMENTS

Summary of Office Action

Claims 88-128 are pending. Of these, claims 89-94, 96-105, and 115 are withdrawn.

The information disclosure statement filed on December 23, 2005 was objected to for failing to comply with 37 C.F.R. §1.98(a)(2) in failing to include legible copies of each cited foreign patent document and non-patent literature publication.

Claim 88 was rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of Leedy U.S. Patent No. 6,563,224 (hereinafter "the '224 patent").

Claim 117 was rejected under 35 U.S.C. § 112 for allegedly containing subject matter which was not described in the specification.

Claims 88, 95, 116, 118, and 119 were rejected under 35 U.S.C. § 102(b) as anticipated by Faris U.S. Patent No. 5,786,629 (hereinafter "Faris").

Claims 106-108, 111-114, 120-122, and 125-128 were rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Sakui et al. U.S. Patent No. 5,615,163 (hereinafter "Sakui"). Claims 109 and 123 were rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Daberko U.S. Patent No. 5,787,445 (hereinafter "Daberko"). Claim 117 was rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Pamler et al. U.S. Patent No. 5,626,279 (hereinafter "Pamler").

Claims 110 and 124 were objected to for being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Summary of Applicant's Amendments

Applicant notes with appreciation the indication of allowable subject matter in claims 110 and 124. Applicant reserves the right to re-write claims 110 and 124 in independent form.

Applicant has amended claims 88, 116, 117, and 118 to more particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner's objections and rejections are respectfully traversed.

Applicant's Reply to the Objection to the Information Disclosure Statement

The Examiner objected to the Information Disclosure Statement filed December 23, 2005 for failing to comply with 37 C.F.R. §1.98(a)(2) in failing to include legible copies of each cited foreign patent document and non-patent literature publication.

Applicant is filing herewith an IDS re-citing and enclosing copies of the Svechnikov, Salazar, Allen and Kochugova non-patent literature publications which were not initialed by the Examiner on the copy of the December 23, 2005 Form PTO/SB/08 returned with the last communication.

The Double Patenting Rejection of Claim 88

Claim 88 was rejected under the judicially created doctrine of obviousness-type double patenting as

being unpatentable over claim 1 of Leedy U.S. Patent No. 6,563,224 (hereinafter "the '224 patent").

Applicant traverses the Examiner's rejection and submits that claim 1 of the '224 patent includes a memory circuit and applicant's amended claim 88 does not. Since a memory circuit having a thinned substrate of claim 1 of the '224 patent is patentably distinct from an integrated circuit of applicant's amended independent claim 88, the double patenting rejection should be withdrawn.

Additionally, applicant submits that claim 1 of the '224 patent includes conductive paths between a first substrate and a second substrate and applicant's amended claim 88 requires conductive paths between interconnect contacts of first surfaces of first and second substrates. Since conductive paths between substrates as required by claim 1 of the '224 patent are patentably distinct from conductive paths between interconnect contacts as required by applicant's amended claim 88, the double patenting should be withdrawn.

Regardless, applicant notes that claim 88 is still rejected under 35 U.S.C. § 102(b) as being anticipated by Faris. As discussed below, amended claim 88 is allowable over Faris. If the Examiner does not withdraw the 102(b) rejection in view of Faris, however, applicant may decide to further amend claim 88 in order to expedite prosecution. Further amendments to claim 88 may remove the Examiner's double patenting rejection and the corresponding request that a Terminal Disclaimer be filed. Thus, applicant respectfully submits that the Examiner's double patenting rejection is premature.

The Rejections of Claims 88, 95,
106-109, 111-114, 116-123 and 125-128

Claims 88, 95, 116, 118, and 119 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by Faris. Claims 106-108, 111-114, 120-122, and 125-128 were rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Sakui. Claims 109 and 123 were rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Daberko. Claim 117 was rejected under 35 U.S.C. § 103(a) as being obvious from Faris in view of Pamler.

Claim 88

Amended claim 88 is directed to an integrated circuit structure including a first and a second substrate. The first and second substrates each include a first surface having interconnect contacts formed thereon. The second substrate has its first surface bonded to the first surface of the first substrate to form conductive paths between the interconnect contacts of the first surfaces of the first and second substrates. The second substrate is a thinned substrate having circuitry formed thereon.

Faris discusses a three-dimensional package including a large number of fillo-leaf subassemblies bonded together at one of their edges. Encoder lines in the subassemblies terminate at the bonded outer edge of the subassemblies, and interconnections formed on the bonded outer edge provide connections between the subassemblies and further circuitry.

The Examiner contends that Faris describes applicant's claimed invention (Office Action, page 4). Faris, however, does not show or suggest first surfaces of first and second substrates having interconnect contacts

formed thereon, the first surfaces being bonded to each other to form conductive paths between the interconnect contacts, as recited in claim 88. At best, Faris discusses connections formed on the outer edge of substrates to provide connections to the subassemblies. Connections formed on an outer edge are not interconnections located on first surfaces of substrates that are bonded to each other, as included in applicant's amended claim 88.

For at least the above reasons, applicant respectfully submits that amended independent claim 88 and any claims which depend therefrom, including claims 95, 106-109 and 111-115, are allowable.

Claim 116

Amended claim 116 is directed to an integrated circuit structure including first and second substrates each having topside and bottomside surfaces. The topside surface of the first substrate and the bottomside of the second substrate have interconnect contacts formed thereon and are bonded to each other. Conductive paths are formed between the interconnect contacts on the topside of the first substrate and the bottomside of the second substrate, the conductive paths providing electrical connections between the first and second substrates. The second substrate is a thinned substrate having circuitry formed thereon.

As discussed above in connection with claim 88, applicant submits that Faris does not show or suggest topside and bottomside surfaces of first and second substrates, respectively, having interconnect contacts formed thereon, the topside and bottomside surfaces being bonded to each other, and conductive paths formed between

the topside and bottomside surfaces for providing electrical connections between the substrates, as recited in claim 116. At best, Faris discusses connections formed on the outer edge of substrates to provide connections to the subassemblies. Connections formed on an outer edge are not interconnections formed between contacts located on first surfaces that are bonded to each other, as included in applicant's amended claim 116.

For at least the above reasons, applicant respectfully submits that amended independent claim 116 and any claims which depend therefrom, including claims 117, 119-123, and 125-128, are allowable.

Claim 118

Amended claim 118 is directed to an integrated circuit structure including a first substrate and a second substrate bonded to the first substrate. The first substrate and the second substrate have first surfaces that are bonded to each other and that have conductive paths formed thereon. The second substrate is a thinned substrate having circuitry formed thereon.

As discussed above in connection with claim 88, applicant submits that Faris does not show or suggest first surfaces of first and second substrates having conductive paths formed thereon and being bonded to each other, as recited in claim 118. At best, Faris discusses substrates having conductive lines formed on one of their surfaces, the substrates being bonded to each other in a stack such that a surface having a conductive line of a substrate is bonded to a surface not having a conductive line of another substrate (see Faris, FIGS. 4-5). The substrates of Faris are stacked such that surfaces of substrates having

conductive lines thereon do not face each other in the stack. For at least the reason that applicant's amended claim 118 requires that the first surfaces of the first and second substrates have conductive paths formed thereon that are bonded to each other, applicant respectfully submits that amended independent claim 118 is allowable. Accordingly, applicant respectfully requests that the Examiner's rejection of claim 118 in view of Faris be withdrawn.

Withdrawn Claims

Applicant would like to point out that claims 89-94, 96-105, and 115, which depend from claim 88, are withdrawn. Once claim 88 is allowed, withdrawn dependent claims 89-94, 96-105, and 115 should be reinstated and allowed.

Conclusion

The foregoing demonstrates that claims 88, 95, 106-114, 116-128, and any claims dependent therefrom are allowable. This application is therefore in condition for allowance. Reconsideration and allowance are accordingly respectfully requested.

Respectfully submitted,



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